

CLAIMS

1. A hinge device for openably and closably connecting one member and the other member, comprising: a base member fixed to the one member; a movable shaft that is rotatably supported by the base member and to which the other member is fixed; a leaf spring member having a curved portion and non-rotatably but axially movably inserted onto the movable shaft; and a fixing plate inserted onto the movable shaft such that the fixing plate does not rotate when the movable shaft rotates but is axially movable, the fixing plate having at least two protrusions provided on its surface in contact with the leaf spring member, characterized in that the leaf spring member and the fixing plate are pressed into contact with each other for relative rotation therebetween.

2. A hinge device for openably and closably connecting one member and the other member, comprising: a base member fixed to the one member; a movable shaft that is rotatably supported by the base member and to which the other member is fixed; a leaf spring member having a curved portion and inserted onto the movable shaft such that the leaf spring member does not rotate when the movable shaft rotates but is axially movable; and a fixing plate non-rotatably but axially movably inserted onto the movable shaft, the fixing plate having at least two protrusions provided on its surface in contact with the leaf spring member, characterized in that the fixing

plate and the leaf spring member are pressed into contact with each other for relative rotation therebetween.

3. A hinge device according to Claim 1 or 2, characterized in that the base member is a bottomed hollow cylindrical case, and that the movable shaft onto which the leaf spring member and the fixing plate are inserted is rotatably supported by the case, with the leaf spring member and the fixing plate being received within the case.

4. A hinge device according to Claim 1 or 2, characterized in that the base member is a hollow cylindrical case that is open at both ends, and that the movable shaft onto which the leaf spring member and the fixing plate are inserted is rotatably supported while penetrating through the case, with the leaf spring member and the fixing plate being received within the case.

5. A hinge device according to any one of Claims 1 through 4, characterized in that one of the leaf spring member and the fixing plate is provided with a protrusion and the other is provided with a recess, hole, or cutout into which the protrusion falls, and that a clicking sensation is produced when the protrusion provided in the one of the leaf spring member and the fixing plate fits in the recess, hole, or cutout provided in the other as the leaf spring member and the fixing plate relatively rotate while in press contact with each other.

6. A hinge device for openably and closably connecting one

member and the other member, comprising: a bracket fixed to the one member; a movable shaft that is rotatably supported by the bracket and to which the other member is fixed; and a leaf spring member having a curved portion and non-rotatably but axially movably inserted onto the movable shaft, characterized in that the bracket has at least two protrusions provided on its surface in contact with the leaf spring member, and that the leaf spring member and the bracket are pressed into contact with each other for relative rotation therebetween.

7. A hinge device according to Claim 6, characterized in that one of the leaf spring member and the bracket is provided with a protrusion and the other is provided with a recess, hole, or cutout into which the protrusion falls, and that a clicking sensation is produced when the protrusion provided in the one of the leaf spring member and the bracket fits in the recess, hole, or cutout provided in the other as the leaf spring member and the bracket relatively rotate while in press contact with each other.

8. A hinge device for openably and closably connecting one member and the other member, comprising: a movable shaft; a first bracket non-rotatably and fixedly installed on the movable shaft and fixed to the one member; a second bracket rotatably and axially movably inserted onto the movable shaft and fixed to the other member; a fixing plate secured onto the second bracket while having the movable shaft inserted through the fixing plate; and a leaf spring

member having a curved portion and non-rotatably but axially movably inserted onto the movable shaft, characterized in that at least two protrusions are provided on a contact surface of one of the fixing plate and the leaf spring member, and that the fixing plate and the leaf spring member are pressed into contact with each other for relative rotation therebetween.

9. A hinge device according to Claim 8, characterized in that one of the leaf spring member and the fixing plate that is secured onto the second bracket is provided with a protrusion and the other is provided with a recess, hole, or cutout into which the protrusion falls, and that a clicking sensation is produced when the protrusion provided in the one of the leaf spring member and the fixing plate fits in the recess, hole, or cutout provided in the other as the leaf spring member and the fixing plate relatively rotate while in press contact with each other.

10. A hinge device according to Claim 8 or 9, characterized in that: the movable shaft has a flange portion provided at a midway position thereof; a friction plate is non-rotatably but axially movably inserted onto the movable shaft while in contact with the flange portion of the movable shaft; a reinforcing plate is secured, while being inserted onto the movable shaft, onto a side surface of the second bracket which is opposite to a side surface onto which the fixing plate is secured; and the friction plate and the reinforcing plate are pressed into contact with each other for relative rotation

therebetween.

11. A hinge device according to any one of Claims 1 through 10, characterized in that a reinforcing leaf spring member is laminated on the leaf spring member.

12. A hinge device according to Claim 11, characterized in that the leaf spring member and the reinforcing leaf spring member laminated on each other differ in spring force.

13. A hinge device according to Claim 11, characterized in that the leaf spring member and the reinforcing leaf spring member laminated on each other differ in deflection amount.

14. A hinge device according to any one of Claims 1 through 12, characterized in that the protrusion is a ball.